REMARKS

Claims 1, 2, 43 and 46-48 are pending in the subject application. By this Amendment, applicants have amended claims 1, 2, 43 and 46-48, and added new claim 52-59.

No new matter is introduced by the amendments to claims 1 and 46 which are fully supported in the specification at, *inter alia*, page 5, line 23 to page 6, line 12; page 12, lines 15-23; Figure 4D; page 19, lines 15-24; page 29, line 30 to page 30, line 3; page 30, lines 12-15; page 32, lines 6-11; page 43, lines 4-6; page 44, lines 13-16; and page 88, lines 15-17. Similarly, the amendments to claims 2 and 47 are fully supported in the specification at, *inter alia*, page 3, lines 19-32; page 5, line 23 to page 6, line 12; page 11, line 32 to page 12, line 29; page 16, line 22 to page 17, line 3; page 19, lines 2-10 and 15-24; page 24, lines 1-19; page 30, lines 12-15; page 32, lines 6-11; page 43, lines 4-6; page 44, lines 17-23; Figures 4B, 4C, 5, 21 and 22; page 88, lines 15-17; and page 90, lines 11-12. The amendments to claims 43 and 48 merely change the claim dependencies and are supported in the specification at, *inter alia*, page 33, lines 19-38; and page 36, lines 7-9. Thus, these amendments also do not raise any issue of new matter.

New claims 52-59 are also fully supported in the specification as filed and therefore do not raise any issue of new matter. Specifically, support for these new claims may be found in the specification as follows: Claims 52 and 56: page 3, lines 19-32; page 6, lines 2-6; page 11, line 32 to page 12, line 29; page 18, lines 2-23; Figures 28 and 29; page 19, lines 2-10; page 24, lines 1-19; page 29, line 30 to page 30, line 9; page

30, lines 23-25; and page 31, lines 24-26; Claims 53 and 57: page 5, line 23 to page 6, line 12; page 19, lines 15-24; page 29, line 30 to page 30, line 9; page 30, lines 23-25; page 31, lines 8-26; page 32, lines 6-11; page 33, lines 19-24 and page 35, lines 5-12; Claims 54, 55, 58 and 59: page 25, line 29 to page 26, line 18. Accordingly, applicants respectfully request that the Examiner enter this Amendment. Upon entry of this Amendment, claims 1, 2, 43, 46-48 and 52-59 will be pending and under examination.

Rejections under 35 U.S.C. §103(a)

The Examiner rejected claims 1, 43, 46 and 48 under 35 U.S.C. §103(a) as allegedly unpatentable over the combined teachings of Lee et *al.* (1999) J. Biol. Chem. 274: 9617-9626 ("Lee") and Furuta *et al.* (1998) Nature Struct. Biol. 5: 276-279 ("Furuta"). The Examiner stated that as previously set forth, Lee provides monoclonal antibodies that bind to the HIV-1 chemokine coreceptor CCR5 and inhibit viral binding to said receptor. The Examiner also stated that Furuta provides a compound (DP-178/T20) that prevents Env-mediated membrane fusion by binding to a fusion intermediate. The Examiner concluded that it would therefore have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine two known compounds that are capable of inhibiting viral replicative events into a single composition since this would provide a more efficient antiviral compound. The Examiner further stated that one of ordinary skill in the art would have also been motivated to employ such a composition in inhibitory methodologies to prevent HIV-infection.

The Examiner stated that applicants assert that the claimed invention is allowable because the combination of ingredients provides an unexpected and synergistic effect in terms of inhibiting HIV-1 infection. The Examiner reminded applicants that the claims are simply directed toward a composition comprising two ingredients. The Examiner also stated that the claims do not require any particular level of antiviral activity. The Examiner further stated that while some specific combinations (citing, e.g., PRO542 and T20) may provide synergistic effects, there is, nevertheless, no requirement in the generic composition for such activity. The Examiner also stated that the claims only require an admixture of two compounds. The Examiner additionally stated that both of the compounds are present in the prior art and are known to display antiviral activity. The Examiner concluded that it would therefore have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine two known compounds that are capable of inhibiting viral replicative events into a single composition since this would provide a more efficient antiviral compound.

The Examiner suggested that applicants may wish to amend the claim language to incorporate the specific antiviral agents set forth in the specification (i.e., A composition ... wherein the first compound is PRO542 and the second compound is T-20 ...).

In response, applicants respectfully traverse this rejection.

Nevertheless, without conceding the correctness of the Examiner's position, applicants note that claims 1 and 46, as amended, recite the specific antiviral agents, i.e.,

monoclonal antibody PA14 or a portion thereof and the T-20 peptide, present in the claimed composition (claim 1) and used in the claimed method (claim 46). As disclosed in the subject specification and discussed on pages 7-8 of applicants' December 31, 2003 Amendment, the combination of these two antiviral agents into an admixture produces a significant and unexpected synergistic effect in inhibiting HIV-1 infection of a CD4+ cell, compared to the anti-HIV-1 activity of these agents when administered individually as disclosed in the prior art. Applicants maintain that because of the wholly unexpected and superior synergistic results achieved with the admixtures recited in claims 1 and 46, these claims are not obvious over the cited art. In addition, applicants note that the language of claims 1 and 46, as amended, is consistent with that suggested by the Examiner on page 2 of the Office Action as a means of overcoming the instant rejection. Applicants respectfully submit, therefore, that the rejection of claims 1 and 46 under 35 U.S.C. 103(a) should be withdrawn.

Applicants note that claims 43 and 48 depend from, *inter alia*, claims 1 and 46, respectively, and therefore necessarily recite all the limitations of claims 1 and 46. Accordingly, for the reasons set forth above, applicants maintain that the rejection of claims 43 and 48 should also be withdrawn.

The Examiner also rejected claims 2, 43, 47 and 48 under 35 U.S.C. §103(a) as allegedly unpatentable over the combined teachings of Lee and Furuta, as applied *supra* to claims 1, 43, 46 and 48, and further in view of Valenzuela *et al.* (1997) J. Virol. 71: 8289-8298 ("Valenzuela"). The Examiner stated that as previously set forth, Valenzuela provides neutralizing, monoclonal gp120-specific antibodies that block HIV-1 gp120

CD4-dependent and -independent binding. The Examiner concluded that it would therefore have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine three known compounds that are capable of inhibiting viral replicative events into a single composition since this would provide a more efficient antiviral compound. The Examiner further that one of ordinary skill in the art would have also been motivated to employ such a composition in inhibitory methodologies to prevent HIV-infection.

The Examiner stated that applicants assert that the claimed invention is allowable because the combination of ingredients provides an unexpected and synergistic effect in terms of inhibiting HIV-1 infection. The Examiner reminded applicants that the claims are simply directed toward a composition comprising three ingredients. The Examiner also stated that the claims do not require any particular level of antiviral activity. The Examiner further stated that while some specific combinations (citing, e.g., PRO542, T20 and PRO140) may provide synergistic effects, there is, nevertheless, no requirement in the generic composition for such activity. The Examiner also stated that the claims only require an admixture of two (*sic*, three) compounds. The Examiner additionally stated that all of the compounds are present in the prior art and are known to display antiviral activity. The Examiner concluded that it would therefore have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine two (*sic*, three) known compounds that are capable of inhibiting viral replicative events into a single composition since this would provide a more efficient antiviral compound.

The Examiner suggested that applicants may wish to amend the claim language to incorporate the specific antiviral agents set forth in the specification (i.e., A composition ... wherein the first compound is PRO542, the second compound is T-20, and the third compound is PRO 140...).

In response, applicants respectfully traverse this rejection.

Without conceding the correctness of the Examiner's position, applicants note that claims 2 and 47, as amended, recite the specific antiviral agents, i.e., monoclonal antibody PA14 or a portion thereof, CD4-IgG2 chimeric heterotetramer and T-20 peptide, present in the claimed composition (claim 2) and used in the claimed method (claim 47). As disclosed in the subject specification and discussed on pages 8-9 of applicants' December 31, 2003 Amendment, the combination of these three antiviral agents into an admixture produces a significant and unexpected synergistic effect in inhibiting HIV-1 infection of a CD4+ cell, compared to the anti-HIV-1 activity of these agents when administered individually as disclosed in the prior art. Applicants maintain that because of the wholly unexpected and superior synergistic results achieved with the admixtures recited in claims 2 and 47, these claims are not obvious over the cited art. In addition, applicants note that the language of claims 2 and 47, as amended, is consistent with that suggested by the Examiner on page 4 of the Office Action as a means of overcoming the instant rejection. Applicants respectfully submit, therefore, that the rejection of claims 2 and 47 under 35 U.S.C. 103(a) should be withdrawn.

Applicants note that claims 43 and 48 depend from, *inter alia*, claims 2 and 47, respectively, and therefore necessarily

recite all the limitations of claims 2 and 47. Accordingly, for the reasons set forth above, applicants maintain that the rejection of claims 43 and 48 should also be withdrawn.

In view of the remarks made hereinabove, applicants respectfully request that the Examiner reconsider and withdraw the claim rejections set forth in the April 20, 2004 Office Action, and earnestly solicit allowance of all claims pending in the subject application.

and multiple dependent claims in this Amendment. Finally, a fee of four hundred and ninety dollars ($490.00) is required for a three-month extension of time for responding to the April 20, 2004 Office Action. Accordingly, a check in the total amount of ONE THOUSAND AND ONE HUNDRED AND THIRTEEN DOLLARS ($1,113.00) is enclosed. However, if any additional fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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